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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/402,726	10/08/1999	GERHARD KOCK	KOCKPCT	6324

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EXAMINER	
MICHALSKI, JUSTIN I	
ART UNIT	PAPER NUMBER
2644	

DATE MAILED: 11/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/402,726	KOCK, GERHARD	
	Examiner	Art Unit	
	Justin Michalski	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2,6,9-15 and 17-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2,6,9-15 and 17-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 29 September 2005 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 17, 2, 6, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohkubo et al. (Hereinafter "Ohkubo") (US Patent 5,862,240)

Regarding Claim 17, Ohkubo discloses at least two acoustic sensors (M1, M2, and Ma) for picking up sound emitted from a sound source (Fig. 10, sound source) and converting into electric signals (Fig. 1), said acoustic sensors being spaced from a useful zone from which useful signals emanate, said acoustic sensors having directional characteristics and being oriented so that the axes of their main reception directions are directed towards a reference position within the useful zone (Fig. 10), said acoustic

sensors being arranged with differing spacing to the reference portion (Fig. 11 discloses deviations in the placements of microphones), the reference position corresponding to and ideal set position of the sound source, and directional vectors between said reference position and the acoustic sensors point in different directions (Fig. 10); a common signal amplitude add device electrically connected to said acoustic sensors (abstract; Fig. 1, adder 4); and delay elements associated with individual acoustic sensors (It is inherent that signal from microphones will have a propagation delay).

Regarding Claim 2, Ohkubo further discloses the acoustic sensors have different distances from the reference position and are arranged in a straight line (Figs. 1, 8, and 11).

Regarding Claim 6, Ohkubo further discloses the acoustic sensors as microphones (i.e. acoustic-electric transducers).

Regarding claim 15, Ohkubo further discloses three microphones disposed in a single plane which may be arranged on the circumference so they are positioned at equal distances R1=R2=R3 where the surface at leas approximately, or in a section, corresponds to a circular element (Fig. 10).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkubo in view of Bowen (US Patent 5,561,737)

Regarding Claims 19 and 9, Ohkubo discloses at least two acoustic sensors (M1, M2, and Ma) for picking up sound emitted from a sound source (Fig. 10, sound source) and converting into electric signals (Fig. 1), said acoustic sensors being spaced from a useful zone from which useful signals emanate, said acoustic sensors having directional characteristics and being oriented so that the axes of their main reception directions are directed towards a reference position within the useful zone (Fig. 10), the reference position corresponding to an ideal set position of the sound source, and directional vectors between said reference position and the acoustic sensors point in different directions (Fig. 10); a common signal amplitude add device electrically or acoustically connected to said acoustic sensors (abstract; Fig. 1, adder 4). Ohkubo does not disclose an optical marking for indicating the ideal set position of the sound source. Bowen discloses a sound device including light emitting diodes for providing a visual indication to individuals present as to which general area of the room is being covered by the microphones (paragraph bridging columns 3 and 4). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include an optical marker for visually indicating to individuals present in the room as to which are is being covered by the microphones.

6. Claims 10, 11, 12, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkubo as applied to claim 10 in view of Zakarauskas (US Patent 5,526,433).

Regarding Claims 10, Obkubo does not disclose the arrangement of the acoustic sensors is automatically adjusted to a modification of the actual position of the sound source so that a reference position of the sound recording device follows the actual position of the sound source. Zakarauskas discloses a self-steering platform with microphones to orient the microphones towards a sound source (Col. 2, lines 1-5). Zakarauskas discloses that focusing sound on a desired sound source improves the signal to noise ratio and sound quality (Col. 1, lines 17-24). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to include position adjustment to increase the sound quality picked up by the microphones.

Regarding Claims 11, 12, and 21, Zakarauskas further discloses the acoustic sensors are displaced automatically by an automatic drive unit (Fig. 4, drive motor 30 and steering system 122) and controlled by delay elements (comparer 116 and delay system 118).

7. Claim 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkubo/Zakarauskas in view of Sibbald et al. (US Patent No. 5,600,727).

Regarding claim 13, Ohkubo/Zakarauskas discloses everything claimed as applied above (see claim 16). Ohkubo/Zakarauskas fails to disclose a positive structure

for determining the position of the sound source. The claim states that determining the position of the sound source "can be" done by measuring the time delay variances of the sound recorders. Sibbald discloses deriving the distances and displacement of the microphones from a reference point by measuring the time-of-flight measurements, which reads on measuring the time delay variances (abstract) and therefore provides the position of the sound source in relation to the microphones. It would have been obvious to one of ordinary skill in the art to modify Ohkubo in view of Sibbald to provide the position of the sound source via the measurement of the time delay variances of the sound recorders for accurate sound set point position for better overall recording.

Regarding claim 14,. Sibbald further discloses a signal processor 30 inspects the signals of the microphones wherein the transmission time element (time delay) is determined by the signal processor (col. 3-lines 10-22).

8. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkubo as applied to claim 17 in view of Kaneda et al. (US Patent 4,536,887).

Ohkubo discloses a device as stated apropos of claim 17 but does not disclose adjustable transmission coefficients. Kaneda et al. discloses adjusting the delay time of the acoustic sensors (i.e. adjustable transmission coefficients) in order to focus on a desired sound source (Fig. 9; Col. 10, lines 21-55). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to delay acoustic sensors in order to focus on a desired sound to pick up.

9. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkubo/Zakarauskas as applied to claim 10 above, and further in view of Kaneda et al. (US Patent 4,536,887).

Ohkubo/Zakarauskas discloses a device as stated apropos of claim 10 but does not disclose adjusting the delay time without adjusting the arrangement of the sensors. Kaneda et al. discloses adjusting the delay time of the acoustic sensors in order to focus on a desired sound source (Fig. 9; Col. 10, lines 21-55). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to delay acoustic sensors in order to focus on a desired sound to pick up.

10. Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkubo/Kaneda as applied to claim 18 in further view of Zakarauskas (US Patent 5,526,433).

Regarding Claim 22, Ohkubo/Kaneda discloses a device as stated apropos of claim 18 above but do not disclose determining the difference of zero crossings of the signals of different acoustic sensors. Zakarauskas discloses a self-steering platform with microphones to orient the microphones towards a sound source (Col. 2, lines 1-5) based on zero crossings of audio signals (comparer 115 and delay system 118). Zakarauskas discloses that focusing sound on a desired sound source improves the signal to noise ratio and sound quality (Col. 1, lines 17-24). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to include position adjustment to increase the sound quality picked up by the microphones.

Regarding Calm 23, Kaneda further discloses the system being a digital system (Col. 2, lines 9-11).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Michalski whose telephone number is (571)272-7524. The examiner can normally be reached on M-F 7-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571)272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JIM

October 29, 2005\

VIVIAN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600